UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 8, 2018

Mr. William F. Maguire
Site Vice President
River Bend Station, Unit 1
Entergy Operations, Inc.
5485 U.S. Highway 61 N
St. Francisville, LA 70775

SUBJECT: SCOPING AND SCREENING AUDIT REPORT REGARDING RIVER BEND STATION, UNIT 1 - LICENSE RENEWAL APPLICATION REVIEW (CAC NO. MF9757)

Dear Mr. Maguire:

By letter dated May 25, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17153A282), Entergy Operations, Inc. (the applicant) submitted an application to the U.S. Nuclear Regulatory Commission (NRC) pursuant to Title 10 of the *Code of Federal Regulations* Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," to renew the operating license NPF-47 for River Bend Station. On October 26, 2017, the NRC staff completed a Scoping and Screening Audit. The audit report is enclosed.

If you have any questions, please contact me by telephone at 301-415-4084 or via e-mail at Emmanuel.Sayoc@nrc.gov.

Sincerely,

/RA/

Emmanuel Sayoc, Project Manager
License Renewal Project Branch
Division of Materials and License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-458

Enclosure:
Audit Report

cc: Distribution via Listserv

SUBJECT: SCOPING AND SCREENING AUDIT REPORT REGARDING RIVER BEND STATION, UNIT 1 LICENSE RENEWAL APPLICATION REVIEW (CAC NO. MF9757) DATED

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OFFICIAL RECORD

River Bend Station, Unit 1, Scoping and Screening Methodology Trip Report

I. Introduction

The U.S. Nuclear Regulatory Commission (NRC) Division of Materials and License Renewal performed an audit of Entergy Louisiana, LLC and Entergy Operations, Inc. (EOI) (the applicant), for River Bend Station, Unit 1 (RBS), license renewal scoping and screening methodology, used by the applicant in development of the RBS license renewal application (LRA). The NRC staff conducted the scoping and screening methodology audit at the RBS facility located in West Feliciana Parish, Louisiana, from October 24–26, 2017. The purpose of the audit was to review the applicant's administrative controls governing implementation of the scoping and screening methodology and the technical basis for selected scoping and screening results for various plant systems, structures, and components (SSCs).

The regulatory bases for the audit were Title 10 of the *Code of Federal Regulations*, Part 54 (10 CFR Part 54), "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," and the guidance contained in NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," Revision 2 (SRP-LR). In addition, the applicant developed the LRA in accordance with the guidance contained in Nuclear Energy Institute (NEI) 95-10, "Industry Guidelines for Implementing the Requirements of 10 CFR Part 54 – The License Renewal Rule," Revision 6 (NEI 95-10), which the NRC has endorsed via Regulatory Guide 1.188, "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses," (RG 1.188).

II. Background

The regulation at 10 CFR 54.21, "Contents of Application – Technical Information," requires that each application for license renewal contain an integrated plant assessment (IPA). The IPA must list, for SSCs within the scope of license renewal, the structures and components (SCs) that are subject to an aging management review (AMR). The regulation at 10 CFR 54.4(a), "Scope," provides the criteria for inclusion of SSCs within the scope of license renewal and 10 CFR 54.21(a)(1) requires that SCs within the scope of license renewal, that are determined to be passive and not periodically replaced (long-lived), are subject to an AMR.

III. Audit Activities

A. Scoping Methodology

Staff Review of Information Sources, Implementing Documents and Scoping Methodology

The audit team reviewed the methodology used by the applicant to identify mechanical, structural, and electrical SSCs within the scope of license renewal (scoping). In addition, the audit team reviewed documentation pertinent to the scoping process. The audit team assessed whether the scoping methodology outlined in the LRA and implementing procedures was appropriately implemented and consistent with 10 CFR Part 54.

The staff confirmed that the applicant's detailed license renewal program guidelines specified the use of the current licensing basis (CLB) source information in developing scoping evaluations. The staff reviewed pertinent information sources used by the applicant including

the component database, the Updated Safety Analysis Report (USAR), maintenance rule basis documents, design-basis documents, license renewal drawings and station drawings.

The staff discussed the applicant's administrative controls for the component database and the other information sources used to verify system information. These controls are described and implemented by plant procedures. Based on a review of the administrative controls and on a sample of the system classification information contained in the applicable documentation, the staff determined that the applicant has established adequate measures to control the integrity and reliability of system identification and safety classification data; therefore, the staff determined that the information sources used by the applicant during the scoping and screening process provided a controlled source of system and component data to support scoping and screening evaluations.

The staff reviewed the implementing procedures and results reports used to support identification of SSCs that the applicant relied on to demonstrate compliance with the requirements of 10 CFR 54.4(a). The applicant's license renewal program guidelines provided a listing of documents used to support scoping evaluations. The staff determined that the design documentation sources, required to be used by the applicant's implementing procedures, provided sufficient information to ensure that the applicant identified SSCs to be included within the scope of license renewal consistent with the plant's CLB.

During the audit, the applicant stated that it evaluated the types of design – basis events (DBE's) listed in NEI 95-10 (anticipated operational occurrences, design-basis accidents (DBAs), external events, and natural phenomena) that were applicable to RBS. The staff reviewed the applicant's basis documents, which described design-basis conditions in the CLB, and addressed events defined by 10 CFR 50.49(b)(1) and 10 CFR 54.4(a)(1). The USAR and design - basis documents discussed events, such as internal and external flooding, tornados, and missiles. The staff determined that the applicant's evaluation of DBEs was consistent with the SRP-LR.

The staff determined that the applicant's license renewal project personnel performed the scoping activities, in accordance with the applicable implementing documents, as follows:

- Mechanical scoping: The applicant used information contained in the plant component database to develop a list of plant systems and used CLB information, design-basis documents, and station drawings to identify system intended functions. The intended functions were evaluated using the criteria of 10 CFR 54.4(a) to identify those systems to be included within the scope of license renewal.

- Structural scoping: The applicant used CLB information, design-basis documents, and maintenance rule basis documents to develop a structures list and to identify structural intended functions. The intended functions were evaluated using the criteria of 10 CFR 54.4(a) to identify those systems to be included within the scope of license renewal.

- Electrical scoping: The applicant used a bounding approach for plant electrical and instrumentation and control (EI&C) systems and included all EI&C systems, and EI&C components contained in mechanical systems, within the scope of license renewal by default.

Staff Verification of Scoping and Screening Results for Sampled Systems and Components

The staff performed a sampling review of the results of the applicant's implementation of the scoping and screening methodology to confirm that the results were in conformance with the applicable implementing documents and the requirements of 10 CFR 54.

The staff reviewed a sample of the scoping and screening implementation for portions of the fire protection water system, including the water-supply tanks, the electrically - driven fire pump, diesel-driven fire pumps, jockey fire pump, fire water yard mains, hydrants, standpipe hose stations, and system piping and valves. The staff reviewed applicable portions of the USAR, scoping and screening reports, and license renewal drawings and performed walkdowns to confirm information contained in the LRA.

B. Screening Methodology

The audit team reviewed the methodology used by the applicant to determine if mechanical, structural, and electrical components within the scope of license renewal would be subject to an AMR (screening). The applicant provided the audit team with a detailed discussion of the processes used for each discipline.

The staff determined that the applicant's license renewal project personnel performed the screening activities, in accordance with the applicable implementing documents, as follows:

- Mechanical components were subject to AMR if they met the criteria of being passive and long-lived and the components supported a system intended function, which required the system to be included within the scope of license renewal. The applicant had identified the component level intended functions (e.g. pressure boundary, heat transfer), which supported a system intended function and highlighted the in-scope components that were subject to AMR on the license renewal drawings. Mechanical components that were included within scope in accordance with 10 CFR 54.4(a)(2) and subject to AMR were also identified on the license renewal drawings.

- Structural components had been determined by the applicant to be inherently passive and long-lived and were grouped by common structural intended functions (e.g. support, enclosure protection, fire barrier, flood barrier, pressure boundary). The components were treated as bulk commodities based on material of construction for the purposes for the aging management review.

- Electrical and instrumentation and control components, which were included within the scope of renewal in accordance with the bounding method used for EI&C, were evaluated in accordance with the guidance contained in NEI 95-10 to identify the passive and long-lived components subject to aging management review.

The audit team noted that the applicant's screening process was performed in accordance with its written requirements and was consistent with the guidance provided in the SRP-LR and NEI 95-10. The audit team determined that the screening methodology was consistent with the requirements of 10 CFR Part 54 for the identification of SSCs that meet the screening criteria of 10 CFR 54.21(a)(1).

C. Aging Management Program Quality Assurance Attributes

The audit team reviewed the AMP quality assurance elements to verify consistency with the staff's guidance described in SRP-LR, Appendix A, "Branch Technical Positions," Section A.2, "Quality Assurance for Aging Management Programs (Branch Technical Position IQMB-1)." The AMP quality assurance elements are corrective action, confirmation process, and administrative controls.

The applicant described the AMP quality assurance elements in LRA Appendix A, "Updated Safety Analysis Report Supplement," Section A.1, Aging Management Programs," and LRA Appendix B, "Aging Management Programs and Activities," Section B.0.3, "Corrective Actions, Confirmation Process and Administrative Controls," and the individual AMPs.

In the LRA, Appendix A stated that RBS quality assurance (QA) procedures, review and approval processes, and administrative controls are implemented in accordance with the requirements of 10 CFR 50, Appendix B. The RBS QA Program applies to safety-related and important to safety structures and components. Corrective actions and administrative (document) control for both safety-related and non-safety-related structures and components are accomplished in accordance with the established RBS corrective action program and document control program, and are applicable to all aging management programs and activities during the period of extended operation. The confirmation process is part of the corrective action program and includes reviews to assure adequacy of corrective actions, tracking and reporting of open corrective actions, and review of corrective action effectiveness.

In the LRA, Appendix B stated that RBS QA procedures, review and approval processes, and administrative controls are implemented in accordance with the requirements of 10 CFR Part 50, Appendix B. The RBS QA program applies to safety-related and important-to-safety structures and components. Corrective actions and administrative (document) control for both safety-related and non-safety-related structures and components are accomplished in accordance with the existing RBS corrective action program and document control program. The confirmation process is part of the corrective action program.

In addition, LRA Appendix B stated that RBS QA procedures, review and approval processes, and administrative controls are implemented in accordance with the requirements of 10 CFR Part 50, Appendix B. The RBS QA program applies to RBS safety-related and augmented activities on plant SSCs. Administrative (document) control for both safety-related and non-safety-related structures and components is accomplished per the existing document control program. The RBS administrative controls are consistent with NUREG-1801, "Generic Aging Lessons Learned (GALL) Report."

Based on the audit team's evaluation, review of the AMPs and information contained in LRA Appendix B, the staff determined the AMP quality assurance elements to be consistent with the staff's position regarding QA for aging management.

D. Aging Management Program Review

In support of the aging management program review for structures, the staff conducted walkdowns of accessible areas of the reactor building (shield building), standby service water cooling tower, pumphouse and basin, service water cooling electrical switchgear building and transformers foundations, exterior and a sample of interior structures of auxiliary building, exterior of auxiliary control building, condensate storage tank foundation, exterior and a sample of interior surfaces of control building control house 230 kV switchyard foundation, diesel generator building, fire protection storage tanks foundations, fire pump house, radioactive waste building, and the turbine building.

IV. Final Briefing

A final briefing was held with the applicant on October 26, 2017, to discuss the results of the scoping and screening methodology audit as documented in this report .

V. Documents Reviewed

1. NUREG-1800, “Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants,” Revision 2

2. NEI 95-10, “Industry Guideline for Implementing the Requirements of 10 CFR Part 54 The License Renewal Rule,” Revision 6

3. River Bend Station, Unit 1, License Renewal Application

4. EN-FAP-LR-001, “License Renewal Project Overview”

5. EN-FAP-LR-003, “System and Structure Scoping for License Renewal”

6. EN-FAP-LR-004, “Mechanical System Screening and Aging Management Reviews”

7. EN-FAP-LR-005, “Electrical System Scoping, Screening and Aging Management Reviews”

8. EN-FAP-LR-006, “Structural Screening and Aging Management Reviews”

9. EN-FAP-LR-009, “License Renewal Information System Use and Maintenance”

10. EN-FAP-LR-0 10, “License Renewal Application Development”

VI. NRC Staff

Ben Beasley	Branch Chief - Environmental Review and NEPA
Bill Rogers	Sr. Reactor Engineer, Scoping and Screening Methodology Audit Lead
Angie Buford	Structural Engineer
David Drucker	Sr. Project Manager Environment Review Audit Lead
Nancy Martinez	Physical Scientist
Briana Grange	General Scientist
Kevin Folk	Physical Scientist
Bill Ford	Sr. Physical Scientist
Robert Hoffman	Environmental Scientist
Bill Rautzen	Health Physicist
Jerry Dozier	Sr. Reliability and Risk Analyst
Brian Barks	RBS Resident Inspector

VII. Applicant Personnel Contacted During Audit

Bill McGuire	RBS Vice President – Operations
Steve Vercelli	RBS General Manager – Plant Operations
Marvin Chase	RBS Director – Regulatory and Performance Improvement
Shannon Peterkin	RBS Manager Radiation Protection
Alyson Coates	RBS Sr. Licensing Engineer
Bridget Johns	RBS Sr. Licensing Specialist
Thomas Broussard	Entergy License Renewal Project Manager
David Lach	Entergy License Renewal Team
Alan Cox	Entergy License Renewal Team
Mark Spinelli	Entergy License Renewal Team
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Mark Sandusky	Entergy License Renewal Team
Jim Morgan	Entergy License Renewal Team
Mike Copper	Entergy Licensing
Bill Spells	Entergy Environmental
Paul Sicard	Entergy Sr. Staff Probabilistic Risk Assessment
Rick Buckley	Entergy Sr. Project Manager